

20070707-201250

1 GTGACTGCTATCACCCCTGGCGGTCTTGTTGAAAGGAATAATTACTCTAGTGTCGACT 60
 M T A I T L G G L L L K G I I T L V S T
 61 CACACATCTTCAACGCTTCCAGCATTCAAAAAGATCTTGGTAGCAAACCGCGCGAAATC 120
 H T S S T L P A F K K I L V A N R G E I
 121 GCGGTCCGTCTTCCGTGCAGCACTCGAAACCGGTGCAGCCACGGTAGCTATTACCC 180
 A V R A F R A A L E T G A A A T V A I Y P
 181 CGTGAAGATCGGGGATCATTCCACCGCTCTTGCTTCTGAAGCTGTCCGCATTGGTACT 240
 R E D R G S F H R S F A S E A V R I G T
 241 GAAGGCTCACCAAGTCAGGCACCTGGACATCGATGAAATTATCGGTGCAGCTAAAAAA 300
 E G S P V K A Y L D I D E I I G A A K K
 301 GTTAAAGCAGATGCTATTACCCGGATATGGCTTCCTGTCTGAAAATGCCAGCTTGCC 360
 V K A D A I Y P G Y G F L S E N A Q L A
 361 CGCGAGTGCAGGGAAAACGGCATTACTTTATTGGCCCAACCCCAGAGGTTCTGATCTC 420
 R E C A E N G I T F I G P T P E V L D L
 421 ACCGGTGATAAGTCTCGTGCAGTAACCGCCGCAAGAAGGCTGGTCTGCCAGTTGGCG 480
 T G D K S R A V T A A K K A G L P V L A
 481 GAATCCACCCCGAGCAAAACATCGATGACATCGTTAAAGCGCTGAAGGCCAGACTTAC 540
 E S T P S K N I D D I V K S A E G Q T Y
 541 CCCATCTTGAAAGGCAGTTGCCGGTGGTGGCGGACCGGTATGCGCTTTGTTCTCA 600
 P I F V K A V A G G G G R G M R F V S S
 601 CCTGATGAGCTCCGCAAATTGGCAACAGAACAGCATCTCGTGAAGCTGAAGCGGCATTGGC 660
 P D E L R K L A T E A S R E A E A A F G
 661 GACGGTTCGGTATATGTCGAACGTGCTGTGATTAACCCCGACACATTGAAGTGCAGATC 720
 D G S V Y V E R A V I N P Q H I E V Q I

FIG. 1A

D99924272010-142001

721 CTTGGCGATCGCACTGGAGAAGTTGTACACCTTATGAACGTGACTGCTCACTGCAGCGT
 780
 L G D R T G E V V H L Y E R D C S L Q R
 CGTCACCAAAAAGTTGTCGAAATTGCGCCAGCACAGCATTGGATCCAGAACTGCGTGAT
 781 840
 R H Q K V V E I A P A Q H L D P E L R D
 CGCATTGTCGGATGCAGTAAAGTTCTGCCGCTCCATTGGTTACCAAGGGCGCGGGAAAC
 841 900
 R I C A D A V K F C R S I G Y Q G A G T
 GTGGAATTCTGGTCGATGAAAAGGGCAACCACGTTTCATCGAAATGAACCCACGTATC
 901 960
 V E F L V D E K G N H V F I E M N N P R I
 CAGGTTGAGCACACCGTGAUTGAAGAAGTCACCGAGGTGGACCTGGTGAAGGGCGCAGATG
 961 1020
 Q V E H T V T E V T E V D L V K A Q M
 CGCTTGGCTGCTGGTGCACCTTGAAGGAATTGGGTCTGACCCAAAGATAAGATCAAGACC
 1021 1080
 R L A A G A T L K E L G L T Q D K I K T
 CACGGTGCAGCACTGCAGTGCCGCATCACCACGGAAAGATCCAAACAAACGGCTCCGCCA
 1081 1140
 H G A A L Q C R I T T E D P N N G F R P
 GATACCGGAACTATCACCGCGTACCGCTCACCAAGGGAGCTGGCGTTCGTCTTGACGGT
 1141 1200
 D T G T I T A Y R S P G G A G V R L D G
 GCAGCTCAGCTCGGTGGCGAAATCACCGCACACTTGACTCCATGCTGGTAAAATGACC
 1201 1260
 A A Q L G G E I T A H F D S M L V K M T
 TGCCGTGGTTCCGACTTGAAACTGCTGTTGCTCGTGACAGCGCGCTGGCTGAGTT
 1261 1320
 C R G S D F E T A V A R A Q R A L A E F
 ACCGTGTCTGGTGGTCAACCAACATTGGTTCTGCGTGCCTGCTGCGGGAAAGAGGAC
 1321 1380
 T V S G V A T N I G F L R A L L R E E D
 TTCACTTCCAAGCGCATGCCACCGGATTATCGCGATCACCCACACCTCCTTCAGGCT
 1381 1440
 F T S K R I A T G F I G D H P H L L Q A

FIG. 1B

1441 CCACCTGCGGATGATGAGCAGGGACGCATCCTGGATTACTTGGCAGATGTCACCGTGAAC 1500
 P P A D D E Q G R I L D Y L A D V T V N
 1501 AAGCCTCATGGTGTGCGTCAAAGGATGTTGCAGCACCAATCGATAAGCTGCCAACATC 1560
 K P H G V R P K D V A A P I D K L P N I
 1561 AAGGATCTGCCACTGCCACCGGGTCCCGTGACCGCCTGAAGCAGCAGCTGGCCCAGCCGCG 1620
 K D L P L P R G S R D R L K Q L G P A A
 1621 TTTGCTCGTGATCTCCGTGAGCAGGACGCAGTGGCAGTTACTGATAACCACCTCCGCGAT 1680
 F A R D L R E Q D A L A V T D T T F R D
 1681 GCACACCAGTCTTGCTTGCACCCGAGTCCGCTCATTGCACTGAAGCCTGCCAGAG 1740
 A H Q S L L A T R V R S F A L K P A A E
 1741 GCCGTCGCAAAGCTGACTCCTGAGCTTGTCCGTGGAGGCCTGGGGCGCGCACCTAC 1800
 A V A K L T P E L L S V E A W G G A T Y
 1801 GATGTGGCGATGCGTTCCCTTTGAGGATCCGTGGGACAGGCTCGACGAGCTGCGCGAG 1860
 D V A M R F L F E D P W D R L D E L R E
 1861 GCGATGCCGAATGTAAACATTAGATGCTGCTTCGCGGCCGCAACACCGTGGGATACACC 1920
 A M P N V N I Q M L L R G R N T V G Y T
 1921 CCGTACCCAGACTCCGTCTGCCGCGCTTGTAAAGGAAGCTGCCAGCTCCGGCTGGAC 1980
 P Y P D S V C R A F V K E A A S S G V D
 1981 ATCTTCCGCATCTCGACCGCTTAACGACGTCTCCAGATGCGTCCAGCAATCGACGCA 2040
 I F R I F D A L N D V S Q M R P A I D A
 2041 GTCCTGGAGACCAACACCGCGGTAGCCGAGGTGGCTATGGCTTATTCTGGTATCTCT 2100
 V L E T N T A V A E V A M A Y S G D L S
 2101 GATCCAAATGAAAAGCTCTACACCCCTGGATTACTACCTAAAGATGGCAGAGGAGATCGC 2160
 D P N E K L Y T L D Y Y L K M A E E I V
 2161 AAGTCTGGCGCTCACATTCTGGCCATTAAAGGATATGGCTGGTCTGCTTCGCCAGCTGCG 2220
 K S G A H I L A I K D M A G L L R P A A

FIG. 1C

2221 GTAACCAAGCTGGTCACCGCACTGCGCCGTGAATTGATCTGCCAGTGCACGTGCACACC
 2280
 V T K L V T A L R R E F D L P V H V H T
 2281 CACGACACTGCGGGTGGCCAGTTGGCTACCTACTTGCTGCAGCTCAAGCTGGTGCAGAT
 2340 H D T A G G Q L A T Y F A A A A Q A G A D
 2341 GCTGTTGACGGTGCTTCCGCACCACTGTCTGGCACCACCTCCCAGCCATCCCTGTCTGCC
 2400 A V D G A S A P L S G T T S Q P S L S A
 2401 ATTGTTGCTGCATTCGCGCACACCCGTCGCGATACCGGTTTGAGCCTCGAGGCTGTTCT
 2460 I V A A F A H T R R D T G L S L E A V S
 2461 GACCTCGAGCCGTACTGGGAAGCTGTGCGCGGACTGTACCTGCCATTGAGTCTGGAACC
 2520 D L E P Y W E A V R G L Y L P F E S G T
 2521 CCAGGCCAACCGGTCGCGTCTACGCCACGAAATCCCAGGCGGACAGTTGTCACCTCG
 2580 P G P T G R V Y R H E I P G G Q L S N L
 2581 CGTGCACAGGCCACCGCACTGGCCTTGCTGATCGCTTCAGCTCATCGAAGACAAC
 2640 R A Q A T A L G L A D R F E L I E D N Y
 2641 GCAGCCGTTAATGAGATGCTGGACGCCAACCAAGGTACCCATCCTCCAAGGTTGTT
 2700 A A V N E M L G R P T K V T P S S K V V
 2701 GGCGACCTCGCACTCCACCTGGTGGTGCAGGTTAGATCCAGCAGACTTGCTGCAGAC
 2760 G D L A L H L V G A G V D P A D F A A D
 2761 CCACAAAAGTACGACATCCCAGACTCTGTCATCGCGTTCCCTGCAGGCGAGCTTGGTAAC
 2820 P Q K Y D I P D S V I A F L R G E L G N
 2821 CCTCCAGGTGGCTGCCAGAACCACTGCGCACCCGCGCACTGGAAGGCCGCTCCGAAGGC
 2880 P P G G W P E P L R T R A L E G R S E G
 2881 AAGGCACCTCTGACGGAAGTTCCCTGAGGAAGAGCAGGCGCACCTCGACGCTGATGATTCC
 2940 K A P L T E V P E E E Q A H L D A D D S

FIG. 1D

2941 AAGGAACGTCGCAACAGCCTCAACCGCCTGCTGTTCCGAAGCCAACCGAAGAGTTCCCTC
 3001 GAGCACCGTCGCCGCTTCGGCAACACCTCTGCCTGGATGATCGTGAATTCTCTACGG
 3061 CTGGTCGAGGGCCGCGAGACTTTGATCCGCCTGCCAGATGTGCGCACCCACTGCTTGGT
 3121 CGCCTGGATGCGATCTCTGAGCCAGACGATAAGGGTATGCGCAATGTTGTGGCCAACGTC
 3181 AACGGCCAGATCCGCCAATGCGTGTGCGTGACCGCTCCGTTGAGTCTGTCACCGCAACC
 3241 GCAGAAAAGGCAGATTCTCCAACAAGGGCCATGTTGCTGCGACCATTGCTGGTGTGTC
 3301 ACTGTGACTGTGCTGAAGGTGATGAGGTCAAGGCTGGAGATGCAGTCGCAATCATCGAG
 3361 GCTATGAAGATGGAAGCAACAATCACTGCTCTGTTGACGGCAAGATTGAACCGCGTTGTG
 3421 GTTCCTGCTGCAACGAAGGTGGAAGGTGGCGACTTGATCGTCGTCGTTCTAA
 V P A A T K V E G G D L I V V V S *

FIG. 1E

E2542660702010201

ATCC 21253	pyc	1	MST HTSSTLPAFK KILVANRGEI AVRAFRAALE	50
NRRL B-11474	pyc		MTAITLGGLL LKGIIITLV	
ATCC 21253	pyc	51	TGAATVAIYP REDRGSFHRS FASEAVRIGHT EGSPVKAYLD IDEIIGAAKK	100
NRRL B-11474	pyc			
ATCC 21253	pyc	101	VKDADAIYPGY GFLSENAQLA RECAENGITF IGPTPEVLDL TGDKSRAVTA	150
NRRL B-11474	pyc			
ATCC 21253	pyc	151	AKKAGLPVLA ESTPSKNIDE IVKSAEGQTY PIFVKAVAGG GGRGMRFVAS	200
NRRL B-11474	pyc		D	S
ATCC 21253	pyc	201	PDELRLKLAIE ASREAAEAAG DGAVYVERAV INPQHIEVQI LGDHTGEVVR	250
NRRL B-11474	pyc		S	R
ATCC 21253	pyc	251	LYERDCSLQR RHQKVVEIAP AQHLDPELRD RICADAVKFC RSIGYQGAGT	300
NRRL B-11474	pyc			
ATCC 21253	pyc	301	VEFLVDEKGN HVFIEMNPRI QVEHTVTEEV TEVDLVKAQM RLAAGATLKE	350
NRRL B-11474	pyc			
ATCC 21253	pyc	351	LGLTQDKIKT HGAALQCRIT TEDPNNGFRP DTGTITAYRS PGGAGVRLDG	400
NRRL B-11474	pyc			
ATCC 21253	pyc	401	AAQLGGEITA HFDSMLVKMT CRGSDFETAV ARAQRALAEF TVSGVATNING	450
NRRL B-11474	pyc			
ATCC 21253	pyc	451	FLRALLREED FTSKRIATGF IADPHHLLQA PPADDEQGRI LDYLADVTVG	500
NRRL B-11474	pyc		G	
ATCC 21253	pyc	501	KPHGVRPKDV AAPIDKLPNI KDLPLPRGSR DRLKQLGPAA FARDLREQDA	550
NRRL B-11474	pyc			
ATCC 21253	pyc	551	LAVDTTFRD AHQSLLATRV RSFALKPAAE AVAKLTPELL SVEAWGGATY	600
NRRL B-11474	pyc			
ATCC 21253	pyc	601	DVAMRFLFED PWDRLLDELRE AMPNVNIQML LRGRNTVGYT PYPDSVCRAF	650
NRRL B-11474	pyc			
ATCC 21253	pyc	651	VKEAASSGVD IFRIFDALND VSQMRPAIDA VLETNTAVAE VAMAYSGDLS	700
NRRL B-11474	pyc			
ATCC 21253	pyc	701	DPNEKLYTLD YYLKMAEEIV KSGAHILAIK DMAGLLRPAA VTKLVTALRR	750
NRRL B-11474	pyc			
ATCC 21253	pyc	751	EFDLPVHVHT HDTAGGQLAT YFAAAQAGAD AVDGASAPLS GTTSQPSLSA	800
NRRL B-11474	pyc			

ATCC 21253 pyc 801 850
NRRL B-11474 pyc IVAFAHTRR DTGLSLEAVS DLEPYWEAVR GLYLPFESGT PGPTGRVYRH

ATCC 21253 pyc 851 900
NRRL B-11474 pyc EIPGGQLSNL RAQATALGLA DRFELIEDNY AAVNEMLGRP TKVTPSSKVV

ATCC 21253 pyc 901 950
NRRL B-11474 pyc GDLALHLVGA GVDPADFAAD PQKYDIPDSV IAFLRGELGN PPGGWPEPLR

ATCC 21253 pyc 951 1000
NRRL B-11474 pyc TRALEGRSEG KAPLTEVPEE EQAHLDADDS KERRNSLNRL LFPKPTEEFL

ATCC 21253 pyc 1001 1050
NRRL B-11474 pyc EHRRRFGNTS ALDDREFFYG LVEGRETLIR LPDVRTPLLV RLDAISEPDD

ATCC 21253 pyc 1051 1100
NRRL B-11474 pyc KGMRNVVANV NGQIRPMRVR DRSVESVTAT AEKADSSNKG HVAAPPAGVV

ATCC 21253 pyc 1101 1150
NRRL B-11474 pyc TVTVAEAEDEV KAGDAVAILIE AMKMEATITA SVDGKIDRVV VPAATKVEGG
E

ATCC 21253 pyc 1151
NRRL B-11474 pyc DLIVVVS

GTGACTGCTATCACCCCTGGCGGTCTTGTGAAAGGAATAATTACTCTAGTGTGACT
 CACACATCTTCAACGCTTCCAGCATTCAAAAAGATCTGGTAGCAAACCGCGCGAAATC
 GCGGTCCGTGCTTCCGTGCAGCACTCGAAACCGGTGCAGCCACGGTAGCTATTACCC
 CGTGAAGATCGGGATCATTCCACCGCTTTGCTCTGAAGCTGTCCGCATTGGTACT
 GAAGGCTCACCAAGTCAAGCGTACCTGGACATCGATGAAATTATCGGTGACGCTAAAAA
 GTTAAAGCAGATGCTATTACCCGGATATGGCTTCTGTCTGAAAAATGCCAGCTGCC
 CGCGAGTGCAGGAAACCGCATTACTTTATGGCCAACCCAGAGGTTCTGATCTC
 ACCGGTGTAAAGTCTCGCGTAACCGCCGAGAAGGCTGTGCCAGTTTGGCG
 GAATCCACCCCGAGCAAAACATCGATGACATCGTTAAAGCGCTGAAGGCCAGACTTAC
 CCCATTTGTAAAGGCAGTTGCCGTGGTGGCGACGCCGTATGCCCTTGTCTTCA
 CCTGATGAGCTCCGAAATTGGCAACAGAAGCATCTGTGAAGCTGAAGCGGCATTGGC
 GACGGTTCGGTATATGTGAAACGTGCTGTGATTAACCCCCAGCACATTGAAGTGCAGATC
 CTTGGCGATCGCACTGGAGAAGTTGACACCTTATGAACGTGACTGCTACTGCAGCGT
 CGTCACCAAAAGTTGTCGAAATTGCGCCAGCACAGCATTGGATCCAGAACTGCGTGT
 CGCATTGTGCGGATGCACTAAAGTTCTGCCCTCATGGTTACAGGGCGCGGAACC
 GTGGAATTCTGGTGTGATGAAAGGCAACCCAGTTCATCGAAATGAACCCACGTATC
 CAGTTGAGCACCCGTGACTGAAAGTCAACGGTGGACCTGGTGAAGGCCAGATG
 CGCTTGGCTGCTGGTCAACCTTGAAGGAATTGGGCTGACCCAAGATAAGATCAAGACC
 CACGGTGCAGCACTGCACTGCCATACCACCGAAGATCCAAACAAACGGCTTCCGCCA
 GATACCGGAACATATCACCGCGTACCGCTACCAGGCGGAGCTGGCTTGTGACGGT
 GCAGCTCAGCTCGGTGGCGAAATCACCGCACACTTGACTCCATGCTGGTAAAATGACC
 TGCCGTGGTTCCGACTTGAAACTGCTGTTGCTGTGCACAGCGCGTGGCTGAGTTC
 ACCGTTGCTGGTGTGCAACCAACATTGGTTCTTGCGTGCCTGCTGCCAGGAG
 TTCACCTCCAAGCGCATCGCCACCGGATTTCGCGCATCCCCACACCTCCCTCAGGCT
 CCACCTCGGGATGATGAGCAGGGACGCATCTGGATTACTGGCAGATGTCACCGTGAAC
 AAGCTCATGGTGTGCTCCAAAGGATGTTGAGCACCAATCGATAAGCTGCCAACATC
 AAGGATCTGCCACTGCCACGGTCTCCGTGAGCAGCAGTGGCAGTTGCCCCAGCCCG
 TTTGCTCGTGTACCTCGTGTGAGCAGCAGTGGCAGTTACTGATAACCACCTCCCG
 GCACACCAGTCTTGCTTGTGACCCGAGTCCGCTATTGCACTGAAGCCTGCCAGAG
 GCCGTGCAAAGCTGACTCCTGAGCTTGTCCGTGGAGGCCTGGGGCGCGACCTAC
 GATGTTGGCGATGCGTTCTCTTGAGGATCCGTGGGACAGGCTCGACGAGCTGCC
 CGCATGCCGAATGAAACATTCAAGTGTCTGCTTCCGCGGCAACACCGTGGGATACACC
 CCGTACCCAGACTCGTGTGCGCGCTTGTGAAAGCTGCCAGCTCCGGCGTGGAC
 ATCTCCGATCTTCGACCGCTTAACGACGCTCCAGATGCGTCCAGCAATCGACGCA
 GTCTGGAGACCAACACCGCGTAGCCAGGTGGCTATGGCTTATTCTGGTGTCT
 GATCAGGAAATGAAAGCTTACACCCCTGGATTACTACCTAAAGATGGCAGAGGAGATGTC
 AAGTCTGGCGCTCACATTCTGGCCTTAAGGATATGGCTGGCTGCTTGTGCCCCAGCTGCG
 GTAACCAAGCTGGTACCCGACTGCCGTGAATTGATCTGCCAGTGCACGTGCACACC
 CACGACACTGCCGGTGGCCAGTTGGCTACCTACTTGCTGCAGCTCAAGCTGGTGCAGAT
 GCTGTTGACGGTCTCGCACCACGTCTGCACTGCCACCTCCAGCCATCCCTGTCTGCC
 ATTGTTGCTGCACTCGCCACACCCGTGCGCATACCGGTTTGAGGCTCGAGGCTGTTCT
 GACCTCGAGCCGTAACGGGAGCTGCGCGACTGTACCTGCCATTGAGTCTGGAAACC
 CCAGGCCAACCGGTGCGCTACCGCACGAAATCCAGGCGGACAGTTGCTTCAACCTG
 CGTCACAGGCCACCGCACTGGGCTTGCTGATCGCTTGTGAGCTCATCGAAAGACAAC
 GCAGCGTTAATGAGATGCTGGGACGCCAACCAAGGTCAACCCATCTCCAAGGTTGTT
 GGCAGCTCGCACTCCACCTGGTGGTGCAGGCTGAGATCCAGCAGACTTTGCTGCAGAC
 CCACAAAAGTACGACATCCAGACTCTGTCTCGTACCGTCTGCCGCGAGCTGGTAAC
 CCTCCAGGTGCTGGCCAGAACCAACTGCCACCCCGCGCACTGGAGGCCGCTCCGAAGGC
 AAGGACCTCTGCGAACAGGCTCAACCGCTGCTGTTCCGAAGGCAACCGAAGAGTTCC
 GAGCACCGTCCGCGCTTCCGGCAACACCTCTGCGCTGGATGATGCAATTCTCTACGG
 CTGGTCAGGGCCCGAGAGACTTGTGATCCGCTGCCAGATGTCGCACTGCTTGT
 CGCTGGATGCGATCTCTGAGCCAGACGATAAGGTATGCCAATGTTGTGCCAAC
 AACGGCCAGATCCGCCAATGCGTGTGCGTGAACCGCTCCGTTGAGTCTGTCAACCGCAACC
 GCAGAAAAGGAGATTCTCCAACAAGGCCATGTTGCTGCACCATCGCTGGTGTG
 ACTGTGACTGTTGCTGAAGGTGATGAGGTCAAGGCTGGAGATGCACTGCAATCATCGAG
 GCTATGAAGATGGAAGCAACAATCACTGCTTGTGACGGCAAGATTGAACCGCTTGTG
 GTTCCCTGCTGCAACGAAGGTGGAAGGTGGCAGCTGATCGTCGTTCTAA

FIG. 3A

MTAITLGGLLLKGIIITL' STHTSSTLPAFKKILVANRGEIAVRAFRAALETGAATVATIYP
REDRGSFHRSEAVREGTEGSPVKAYLDIDEIIGAAKKVKADAIYPGYGFLSENAQLA
RECAENGITFIGPTPEVLDLTGDKSRAVTAAKKAGLPVLAESTPSKNIIDDIVKSAEGQTY
PIFVKAVAGGGGRGMRFVSSPDELRKLATEASREAAAFGDGSVYVERAVINPQHIEVQI
LGDRGEVVHLYERDCSLQRRHQKVVEIAPAQHLDPELDRDRICADAVKFCRSIGYQGAGT
VEFLVDEKGHNHFIEMNPRIQVEHTVTEEVTEVDLVKAQMRLAAGATLKEGLTQDKIKT
HGAALQCRITTEDPNNGFRRPDTGTITAYRSPGGAGVRLDGAAQLGGEITAHFDSMLVKMT
CRGSDFETAVARAQRALAEFTVSGVATNIGFLRALLREEDFTSKRIATGFIGDHPHLLQA
PPADDEQGRILDYLADEVNPKPHGVRPKDVAAPIDKLPNIKDLPLPRGSRDRLKQLGPAA
FARDLREQDALAVTDTTFRDAHQSLLATRVSFALKPAAEAVAKLTPELLSVEAWGGATY
DVAMRFLFEDPWDRLDELREAMPNVNIQMLLRGRNTVGYTPYPSVCRAFVKEAASSGVD
IFRIFDALNDVSQMRPAIDAVLETNTAVAEVAMAYSGDLSDPNEKLYTLDYYLKMAEEIV
KSGAHILAICKDMAGLLRPAAVTKLVTALRREFDLPVHVHTHDTAGGQLATYFAAAQAGAD
AVDGASAPLSGTTSQPSLSAIVAAFHTRRDGLSLEAVSDLEPYWEAVRGLYLPFESGT
PGPTGRVYRHEIPGGQLSNLRAQATALGLADRFELIEDNYAAVNEMLGRPTKVTSSKV
GDLALHLVGAGVDPADFAADPQKYDIPDSVIAFLRGELGNPPGGWPEPLRTRALEGSEG
KAPLTEVPEEEQAHLDADDSKERRNSLNRLFPKPTEEFLEHRRRGNTSALDDREFFYG
LVEGRETLIRLPDVRTPLLVRLDAISEPDDKGMRNVVANVNGQIRPMRVRDRSVESVTAT
AEKADSSNKGHVAAPFAGVVTVTVAEGDEVKAGDAVAAIEAMKMEATITASVDGKIERVV
VPAATKVEGGDLIVVVS

FIG. 3B

Effect of various substrate concentrations on pyruvate carboxylase activity from *C. glutamicum* BF100 (○) and ATCC 21253 (●).

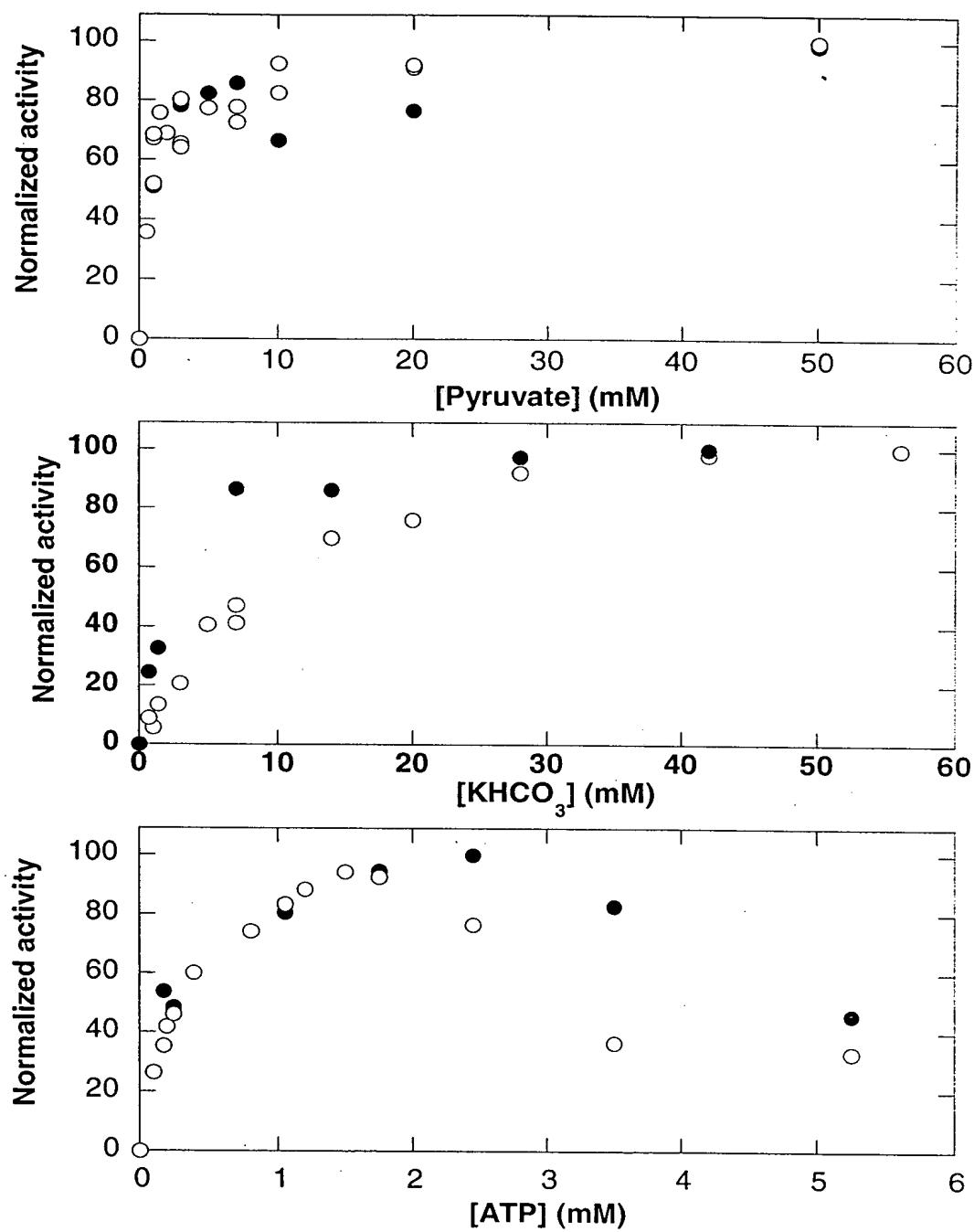


FIG. 4

Effect of aspartate on the activity of pyruvate carboxylase from *C. glutamicum* BF100 (○) and ATCC 21253 (●).

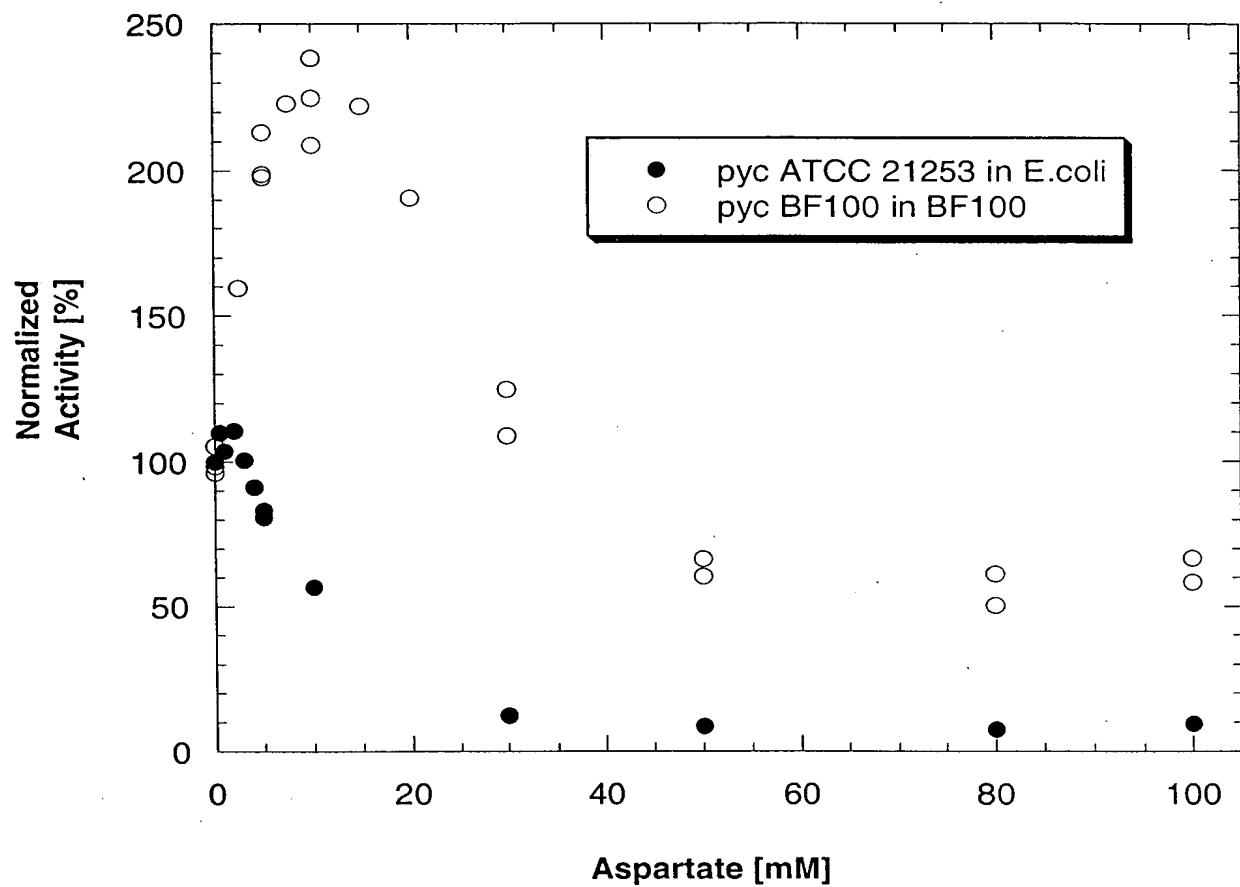


FIG. 5

Effect of Acetyl-CoA on pyruvate carboxylase activity from *C. glutamicum* BF100 (O) and ATCC 21253 (●).

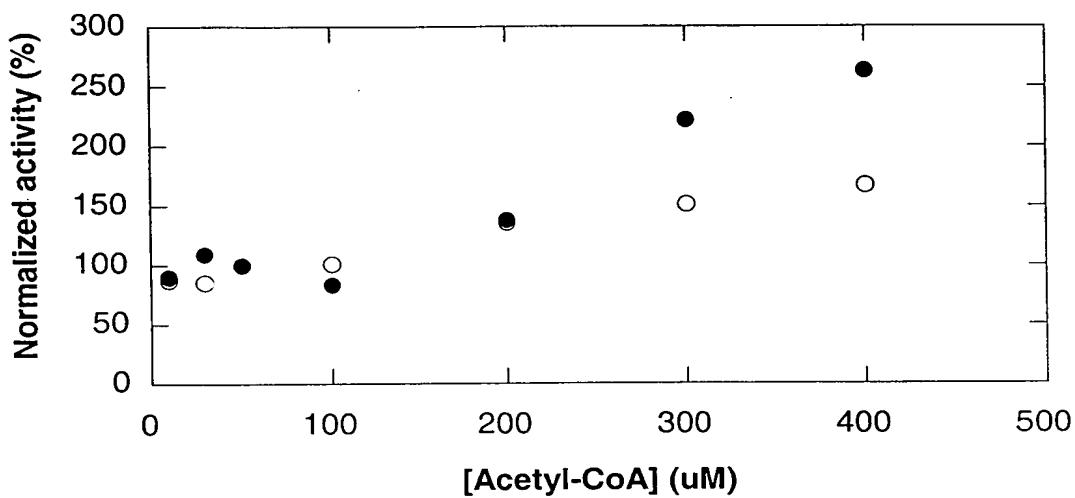


FIG. 6